E3 cont, subject a sensing unit defining at least one counting orifice for receiving a reagent mixture and analyzing a particle distribution of the reagent mixture.

Remarks

Claims 36, 37 and 39 have been cancelled; claims 27, 35 and 38 have been amended to include the limitations of cancelled claims 36, 37, and 39, respectively, and therefore claims 27-35 and 38 are now pending in this application. The Examiner's indication that claim 37 was not pending in this application prior to its cancellation in this Amendment was not correct. Claim 37 was included at page 4 of the Amendment dated February 24., 2000. In view of the above amendments and the following remarks, it is respectfully submitted that these claims are allowable.

Dependent claims 36, 37 and 39 have been cancelled, and independent claims 27, 35 and 38 have been amended to include only the additional limitations of the respective cancelled dependent claims. Accordingly, it is respectfully submitted that no new matter has been added and no new issues have been raised, and therefore these amendments are proper and should be entered under 37 C.F.R. § 1.116.

Claims 27-39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto in view of Kabata, Taylor, Dixon and Callan or Weiser, and further stand rejected under 35 U.S.C. § 103 as being unpatentable over Cellect Hematology in view of Kabata, Taylor, Dixon and Callan or Weiser. The Examiner's grounds for rejection are hereinafter traversed, and reconsideration is respectfully requested, particularly in view of the clarifying amendments to the claims.

Claims 35 and 38-39 also stand rejected under the judicially-created doctrine of obviousness-type double patenting in view of Applicant's prior U.S. Patent No. 5,728,351. Applicant's previously executed and submitted Terminal Disclaimer directed to particular

claims has not been accepted. Claim 39 has been cancelled. Accordingly, Applicant submits herewith an executed Terminal Disclaimer along with the requiste fee in order to overcome this ground for rejection.

The Examiner has indicated that the instant inventorship has been assumed to include two inventors. However, Applicant submitted on August 3, 1999 a Petition Deleting Correctly Named Original Person Who Is Not An Inventor Of Invention Now Being Claimed under 37 CFR 1.48(b) (copy enclosed). Accordingly, Edward L. Carver, Jr. is the sole inventor of the claims currently pending in this application.

Neither Yamamoto nor Cellect Hematology teach or suggest an apparatus comprising a control unit or like means for adjusting the volumetric ratio of lysing agent to blood in correspondence with an operator input indicative of the species of the blood, as recited in the present claims. Rather, both Yamamoto and Cellect Hematology teach systems that are fixed to make the same dilution ratios, with the same volumes of reagent-mixture components for every blood sample.

Kabata likewise does not teach or suggest adjusting or modifying the volumetric ratio of lysing agent to blood to correspond to an operator input and species, as recited in amended independent claims 27, 35 and 38. Kabata's suggestion to adapt the commercially-available software for human blood so that it may be better used for research purposes in connection with animal blood concerns changing the histogram thresholds to accommodate animal (rabbit), as opposed to human cell types. The thresholds divide the cell populations on the histograms, and they cannot be changed on the systems identified (see, for example, Figure 2 of Kabata showing the thresholds in solid lines). Accordingly, Kabata suggests that the software might be adapted for research purposes to adjust the histogram thresholds to better accomodate the animal cell types tested. The "Technicon H1" software identified by Kabata similarly modified the histogram thresholds for rats and dogs, but did not require different reagent mixtures for the different species. Accordingly, Kabata makes no teaching or suggestion of adjusting or creating different reagent mixtures in response to

different operator inputs, much less adjusting the volumetric ratio of lysing agent to blood to correspond to any one of a plurality of different operator inputs and respective species, as recited in amended independent claims 27, 35 and 38. Thus, Kabata does not teach or suggest modification of either Yamamoto or Cellect Hematology to achieve the claimed invention.

Taylor discusses various staining techniques for flow cytometry, but does not suggest adjusting or creating different reagent mixtures. Accordingly, Taylor does not materially add to the teachings of Yamamoto, Cellect Hematology and Kabata with respect to the present invention.

Dixon et al. show experimental results derived from tests using non-standard concentrations of the lysing agent Zapoglobin on canine leucocytes. In sum, Dixon et al. conclude that adjusting the volume of the lytic agent has no significant effect, but rather increasing the time of exposure to the standard concentration of the lytic agent did significantly increase lysis. Specifically, Dixon et al. state in the abstract on page 249: "Cannine leucocytes did not show significantly increased lysis when subjected to Zapoglobin at approximately four times the standard concentration, but did do so on exposure to the standard concentration for longer than five minutes".

Accordingly, Dixon et al. specifically teach that changing the standard concentration of lytic agent has no significant effect on increasing lysis, and therefore Dixon et al., in effect, teach away from adjusting the volume of lyse to blood in response to different operator inputs indicative of different species, as recited in the amended independent claims. Rather, if anything, Dixon et al. might suggest that one could change the exposure time to the standard concentration of the lytic agent in order to increase or decrease lysis. The paragraph cited by the Examiner at page 252 of Dixon et al. similarly in no way teaches or suggests the present invention as recited in the amended claims. Rather, this paragraph merely reiterates the conclusions set forth in the abstract on page 249.

The non-obvious nature of the present invention over Dixon et al. is further evidenced by the more than 10 year period between the publishing of the Dixon et al.

reference and the filing of the present application. Although Dixon et al. taught that there was no concentration dependent effect for the Zapoglobin lysing agent on canine leukocytes, a commercial embodiment of the present invention does accurately analyze canine leucocytes via automatic adjustment of lysing agent mixtures upon the pressing of a button corresponding to the canine species, in spite of the contrary teachings of Dixon, et al. Thus, it would not have been obvious for one of average skill in the pertinent art to apply the teachings of Dixon in order to derive the present invention.

Callen et al. is not prior art with respect to the present invention. Callen et al. was published in October 1992, less than one year prior to the effective filing date of the present application (January 21, 1993). In any event, Callen et al. show evaluation of a system for hemoglobin measurement in dogs, cats, horses, and cows. Although Callen et al. summarize test result range differentials between those species, the Callen et al. do not suggest alteration of the testing process for different species. Thus, Callen et al. do not teach or suggest changing the ratio of lysing agent to blood for different species, but rather effectively teach away from doing so by showing acceptable results obtained without regard to species during the actual testing. Therefore, even if Callen et al. were prior art with respect to the present invention, which it is not, it would not materially add to the teachings of Yamamoto, Cellect Hematology, Kabata, Taylor and Dixon et al. with respect to the present invention.

Weiser discusses various hematological techniques for different species, but does not suggest adjusting or creating different reagent mixtures. Weiser shows alteration of a device aperture current in order to count particles of sizes specific to common veterinary subjects. Weiser also shows doubling the dilution ratio where the particles are too numerous to be counted accurately by the subject device. Weiser does not make any suggestion to adjust the volumetric ratio of lysing agent to blood according to the subject species. Accordingly, Weiser does not materially add to the teachings of Yamamoto, Cellect Hematology, Kabata, Taylor, Dixon et al. and Callen with respect to the present invention.

It is therefore respectfully submitted that amended independent claims 27, 35 and 38, are unobvious over either Yamamoto or Cellect Hematology in view of Kabata, Taylor, Dixon et al. and Callan or Weiser, for at least these reasons. Because claims 28-34 each depend from one of these independent claims, it is respectfully submitted that these dependent claims are likewise unobvious over the prior art references of record for at least the same reasons.

Accordingly, it is respectfully submitted that claims 27-35 and 38 are allowable, and an early action to that effect is earnestly solicited.

No fee in addition to that submitted herewith is believed to be required; however, if an additional fee is required, or to cover any deficiency in fees already paid, authorization is hereby given to charge our deposit account no. 11-0231.

Respectfully submitted,

August 14, 2000

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